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FOREST SURVEY REPORT 141
MAY 1962

Forest Statistics for

PACIFIC NORTHWEST
FOREST AND RANGE EXPERIMENT STATION
U.S. DEPT. OF AGRICULTURE · FOREST SERVICE

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Forest Survey Report 141
May 1962

FOREST STATISTICS

FOR

PIERCE COUNTY, WASHINGTON

by

Benjamin Spada

PACIFIC NORTHWEST
FOREST AND RANGE EXPERIMENT STATION
R. W. Cowlin, Director Portland, Oregon

FOREST SERVICE U.S. DEPARTMENT OF AGRICULTURE

PREFACE

This publication summarizes the results of the third inventory of the forests of Pierce County, Wash., completed in 1959. Previous inventories of Pierce County were made in 1932-33 and 1938. The results of these inventories were published as "Forest Statistics for Pierce County, Washington," March 1934, and "Forest Statistics for Pierce County, Washington," May 1939. Such inventories are a part of the Forest Survey, a nationwide project of the Forest Service authorized by the McSweeney-McNary Forest Research Act of 1928, amended June 25, 1949. The purpose of the Forest Survey is to periodically inventory the extent and condition of forest lands and the volume of timber on them, to ascertain rates of forest growth and depletion, to estimate present consumption of timber products and probable future trends in timber requirements, to analyze and make available survey information needed in the formulation of forest policies and programs, and to make resurveys as necessary to keep the basic information up to date.

The Forest Survey is conducted in the various forest regions of the Nation by the regional experiment stations of the Forest Service. In the States of Oregon and Washington, it is an activity of the Pacific Northwest Forest and Range Experiment Station at Portland, Oreg.

The 1959 inventory of Pierce County was based on sampling techniques which did not include a type map, thus no county type map was prepared.

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PIERCE COUNTY'S FOREST RESOURCE IN BRIEF

COMMERCIAL FOREST LAND--

Embraces 58 percent of the county or 617,000 acres;
Has decreased by about 80,000 acres between inventories;
Is 32 percent publicly owned; and
Is composed of 17 percent hardwood types and 83 percent softwood types.

GROWING STOCK VOLUME--

Amounts to 2,281 million cubic feet;
Is 92 percent softwoods; and
Is 54 percent publicly owned.

SAWTIMBER VOLUME--

Totals 10,960 million board feet, International 1/4-inch rule (10,173 million board feet, Scribner rule);
Is 96 percent softwoods;
Is 58 percent publicly owned; and
Is 59 percent in trees less than 29 inches in diameter.

NATIONAL FOREST OWNERSHIP--

Controls 19 percent of the commercial forest area;
Has 49 percent of the sawtimber volume; and
Has 32 percent of the county's sawtimber area.

OTHER PUBLIC OWNERSHIP--

Holds 13 percent of both the commercial forest area and the sawtimber area; and
Has 9 percent of the sawtimber volume.

FOREST INDUSTRY OWNERSHIP--

Holds 38 percent of the commercial forest area;
Has 34 percent of the sawtimber area; and
Has 32 percent of both sawtimber volume and growing-stock volume.

FARMER AND MISCELLANEOUS PRIVATE OWNERSHIP--

Has 30 percent of the commercial forest area;
Has 21 percent of the sawtimber area;
Has 10 percent of the sawtimber volume; and
Has 14 percent of the growing-stock volume.

AVERAGE ANNUAL CUT FOR THE PAST 5 YEARS--

Has been 253 million board feet, International 1/4-inch rule (234 million board feet, Scribner rule); and
Has been 99 percent softwoods.

Table 1.--Area by land classes, Pierce County, 1959

(Acres)

Land class	Area
Commercial forest	617,000
Unproductive forest	79,000
Productive-reserved forest	101,000
Total forest	797,000
Nonforest	1/ 276,000
All land	2/ 1,073,000

1/ Includes 10,120 acres of water according to Survey standards of area classification but defined by Bureau of the Census as land, and 107,750 acres of urban area eliminated from the inventory.

2/ From U.S. Bureau of the Census, Land and Water Area of the United States, 1950.

Table 2.--Area of commercial forest land, by stand-size and ownership classes, Pierce County, 1959

(Acres)

Stand-size class	All ownership	National forest	Other public	Forest industry	Farmer and miscel-laneous private
Sawtimber stands:					
Large	107,000	58,000	2,000	40,000	7,000
Small	212,000	45,000	39,000	67,000	61,000
Total	319,000	103,000	41,000	107,000	68,000
Poletimber stands	199,000	10,000	31,000	72,000	86,000
Sapling and seedling stands	89,000	5,000	5,000	51,000	28,000
Nonstocked areas	10,000	2,000	--	4,000	4,000
All classes	617,000	120,000	77,000	234,000	186,000

Table 3.--Area of commercial forest land, by stocking classes of growing-stock trees and by stand-size classes, Pierce County, 1959

(Acres)

Stocking class	All stands	Sawtimber stands	Poletimber stands	Sapling and seedling stands	Nonstocked stands
70 percent or more	484,000	269,000	148,000	67,000	(1/)
40 to 70 percent	90,000	43,000	33,000	14,000	(1/)
10 to 40 percent	33,000	7,000	18,000	8,000	(1/)
Less than 10 percent	10,000	(1/)	(1/)	(1/)	10,000
All classes	617,000	319,000	199,000	89,000	10,000

1/ Not applicable.

Table 4.--Area of commercial forest land, by forest types and ownership classes, Pierce County, 1959

(Acres)

Type	All ownerships	Public ownerships	Private ownerships
Douglas-fir	288,000	102,000	186,000
Western hemlock	158,000	51,000	107,000
True fir—mountain hemlock	35,000	29,000	6,000
Western white pine	1,000	1,000	--
Western redcedar	15,000	2,000	13,000
Alaska-cedar	1,000	1,000	--
Grand fir	1,000	--	1,000
Lodgepole pine	1,000	--	1,000
Red alder	90,000	9,000	81,000
Other hardwoods	17,000	--	17,000
Nonstocked	10,000	2,000	8,000
All types	617,000	197,000	420,000

Table 5.--Area of noncommercial forest land, by forest types, Pierce County, 1959

(Acres)

Type	All areas	Productive-reserved areas	Unproductive areas
Douglas-fir	34,000	34,000	--
Hemlock—Sitka spruce	19,000	19,000	--
Fir—spruce	45,000	45,000	--
Nonstocked	3,000	3,000	--
Subalpine	11,000	--	11,000
Noncommercial rocky	67,000	--	67,000
Other	1,000	--	1,000
All types	180,000	101,000	79,000

Table 6.--Volume of timber on commercial forest land, by class of timber and by softwoods and hardwoods, Pierce County, 1959

Class of timber	All species	Softwoods	Hardwoods
	Million cubic feet		
Sawtimber trees:			
Saw-log portion	1,781	1,702	79
Upper-stem portion	134	128	6
Total	1,915	1,830	85
Poletimber trees	366	271	95
All growing-stock trees	2,281	2,101	180
Sound cull trees:			
Sawtimber-size	12	10	2
Poletimber-size	12	10	2
Total	24	20	4
Rotten cull trees:			
Sawtimber-size	9	9	--
Poletimber-size	--	--	--
Total	9	9	--
Salvable dead trees:			
Sawtimber-size	91	88	3
Poletimber-size	--	--	--
Total	91	88	3
Total, all timber	2,405	2,218	187

Table 7.--Volume of growing stock and sawtimber on commercial forest land, by ownership classes and by softwoods and hardwoods, Pierce County, 1959

Timber and ownership classes	All species	Softwoods	Hardwoods
	Million cu. ft.	Million cu. ft.	Million cu. ft.
Growing stock:			
National forest	1,045	1,043	2
Other public	190	166	24
Forest industry	730	659	71
Farmer and miscellaneous private	316	233	83
All ownerships	2,281	2,101	180
	Million bd. ft.	Million bd. ft.	Million bd. ft.
Sawtimber (International ¼-inch rule):			
National forest	5,373	5,370	3
Other public	1,046	1,021	25
Forest industry	3,460	3,269	191
Farmer and miscellaneous private	1,081	851	230
All ownerships	10,960	10,511	449
Sawtimber (Scribner rule):			
National forest	4,979	4,976	3
Other public	970	946	24
Forest industry	3,214	3,029	185
Farmer and miscellaneous private	1,010	788	222
All ownerships	10,173	9,739	434

Table 8.--Volume of growing stock on commercial forest land, by species and diameter classes, Pierce County, 1959

Species	Diameter class (inches at breast height)										
	All classes	5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-28.9	29.0-38.9	39.0 and larger
	Million cubic feet										
Softwoods:											
Douglas-fir	797	35	33	58	56	52	41	43	235	158	86
Ponderosa pine	1	--	--	--	--	--	--	--	1	--	--
Western white pine	17	1	--	1	--	1	1	2	9	2	--
Lodgepole pine	4	--	1	1	1	1	--	--	--	--	--
Grand fir	5	--	1	--	2	1	--	1	--	--	--
Pacific silver fir	270	9	12	14	15	16	21	19	88	61	15
Noble fir	51	--	--	--	1	1	2	1	15	20	11
Subalpine fir	21	1	1	2	1	2	2	4	7	1	--
Engelmann spruce	1	--	--	--	--	--	--	--	--	1	--
Sitka spruce	2	--	--	--	--	1	1	--	--	--	--
Mountain hemlock	24	--	--	--	--	2	1	2	7	10	2
Western hemlock	791	19	27	34	36	40	54	54	272	147	108
Alaska-cedar	5	--	--	--	--	1	1	1	1	1	--
Western redcedar	112	5	8	8	7	6	9	9	32	13	15
Total	2,101	70	83	118	119	124	133	136	667	414	237
Hardwoods:											
Red alder	129	21	27	24	22	17	10	5	3	--	--
Oregon ash	8	1	--	1	1	1	1	2	1	--	--
Black cottonwood	8	--	1	1	1	1	1	1	1	1	--
Bigleaf maple	24	3	5	3	5	4	1	1	2	--	--
Oregon white oak	1	--	--	1	--	--	--	--	--	--	--
Pacific madrone	10	2	3	2	2	1	--	--	--	--	--
Total	180	27	36	32	31	24	13	9	7	1	--
All species	2,281	97	119	150	150	148	146	145	674	415	237

Table 9.--Volume of sawtimber on commercial forest land, by species and diameter classes, Pierce County, 1959 (International ¼-inch rule)

Species	Diameter class (inches at breast height)							
	All classes	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-28.9	29.0-38.9	39.0 and larger
	Million board feet							
Softwoods:								
Douglas-fir	4,203	202	221	193	222	1,322	1,056	987
Ponderosa pine	10	--	--	--	2	8	--	--
Western white pine	108	2	3	6	10	66	21	--
Lodgepole pine	6	2	2	2	--	--	--	--
Grand fir	16	7	5	--	4	--	--	--
Pacific silver fir	1,201	59	65	90	87	466	347	87
Noble fir	304	4	5	8	6	84	120	77
Subalpine fir	76	5	8	8	15	31	9	--
Engelmann spruce	4	--	--	--	1	--	3	--
Sitka spruce	5	--	2	2	--	1	--	--
Mountain hemlock	87	1	7	3	8	33	25	10
Western hemlock	4,059	152	182	266	278	1,553	923	705
Alaska-cedar	16	2	2	2	3	5	2	--
Western redcedar	416	23	28	37	37	152	61	78
Total	10,511	459	530	617	673	3,721	2,567	1,944
Hardwoods:								
Red alder	288	99	82	55	34	18	--	--
Oregon ash	37	5	7	5	10	10	--	--
Black cottonwood	48	5	6	4	7	13	13	--
Bigleaf maple	60	19	19	6	4	12	--	--
Oregon white oak	1	1	--	--	--	--	--	--
Pacific madrone	15	6	3	4	--	2	--	--
Total	449	135	117	74	55	55	13	--
All species	10,960	594	647	691	728	3,776	2,580	1,944

Table 10.--Volume of sawtimber on commercial forest land, by species and diameter classes, Pierce County, 1959 (Scribner rule)

Species	Diameter class (inches at breast height)							
	All classes	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-28.9	29.0-38.9	39.0 and larger
	Million board feet							
Softwoods:								
Douglas-fir	3,892	174	190	166	191	1,225	997	949
Ponderosa pine	9	--	--	--	1	8	--	--
Western white pine	100	2	3	6	9	61	19	--
Lodgepole pine	5	2	2	1	--	--	--	--
Grand fir	14	6	4	--	4	--	--	--
Pacific silver fir	1,113	55	60	84	81	431	321	81
Noble fir	282	3	4	8	6	78	112	71
Subalpine fir	70	5	8	7	14	28	8	--
Engelmann spruce	3	--	--	--	1	--	2	--
Sitka spruce	5	--	2	2	--	1	--	--
Mountain hemlock	80	1	6	2	8	30	23	10
Western hemlock	3,759	141	169	246	257	1,438	855	653
Alaska-cedar	15	2	2	2	3	5	1	--
Western redcedar	392	21	27	35	35	143	58	73
Total	9,739	412	477	559	610	3,448	2,396	1,837
Hardwoods:								
Red alder	277	94	79	53	33	18	--	--
Oregon ash	36	5	7	5	9	10	--	--
Black cottonwood	47	5	5	4	8	12	13	--
Bigleaf maple	58	18	19	6	4	11	--	--
Oregon white oak	2	1	1	--	--	--	--	--
Pacific madrone	14	6	2	4	--	2	--	--
Total	434	129	113	72	54	53	13	--
All species	10,173	541	590	631	664	3,501	2,409	1,837

Table 11.--Volume of salvable, dead sawtimber-size trees on commercial forest land, by softwoods and hardwoods, Pierce County, 1959

Species group	Volume	
	International ¼-inch rule	Scribner rule
	Million board feet	
Softwoods	335	362
Hardwoods	20	21
All species	355	383

Table 12.--Annual mortality of growing stock and sawtimber on commercial forest land, by ownership classes and by softwoods and hardwoods, Pierce County, 1959

Ownership class	Growing stock			Sawtimber (International 1/4-inch rule)			Sawtimber (Scribner rule)		
	All species	Softwoods	Hardwoods	All species	Softwoods	Hardwoods	All species	Softwoods	Hardwoods
	Million cubic feet			Million board feet			Million board feet		
National forest	4	4	--	23	23	--	21	21	--
Other public	--	--	--	3	1	2	3	1	2
Forest industry	6	6	--	32	31	1	30	29	1
Farmer and miscellaneous private	2	1	1	4	2	2	4	2	2
All ownerships	12	11	1	62	57	5	58	53	5

Table 13.--Number of growing-stock trees on commercial forest land, by diameter classes and by softwoods and hardwoods, Pierce County, 1959

Diameter class (inches d.b.h.)	All species	Softwoods	Hardwoods
5.0 - 6.9	32,316,000	25,272,000	7,044,000
7.0 - 8.9	19,886,000	15,554,000	4,332,000
9.0 - 10.9	10,248,000	8,047,000	2,201,000
11.0 - 12.9	6,753,000	5,304,000	1,449,000
13.0 - 14.9	4,515,000	3,672,000	843,000
15.0 - 16.9	3,180,000	2,807,000	373,000
17.0 - 18.9	2,338,000	2,155,000	183,000
19.0 - 28.9	6,165,000	6,051,000	114,000
29.0 - 38.9	1,765,000	1,759,000	6,000
39.0 and larger	622,000	622,000	--
All classes	87,788,000	71,243,000	16,545,000

Table 14.--Number of cull and salvable dead trees on commercial forest land, by diameter groups and by softwoods and hardwoods, Pierce County, 1959

Diameter class (inches d.b.h.)	Cull trees	Salvable dead trees
Softwoods:		
5.0 - 10.9	1,226,000	--
11.0 - 18.9	201,000	296,000
19.0 and larger	244,000	348,000
Total	1,671,000	644,000
Hardwoods:		
5.0 - 10.9	455,000	--
11.0 - 18.9	88,000	44,000
19.0 and larger	51,000	13,000
Total	594,000	57,000
All species	2,265,000	701,000

Table 15.--Timber harvest by ownership class, Pierce County, 1950-60 (Scribner rule)

Year[1/]	Private	State	National forest	Other public	Total
	Thousand board feet				
1950	188,857		26,600	--	215,457
1951	157,612		41,200	--	198,812
1952	201,911		31,400	--	233,311
1953	144,842		21,100	--	165,942
1954	143,149		30,200	130	173,479
1955	178,821	29,031	20,660	1,015	229,527
1956	192,198	43,616	26,000	--	261,814
1957	165,004	320	25,051	316	190,691
1958	146,667	1,862	23,765	834	173,128
1959	266,771	27,557	24,783	202	319,313
1960	232,755	2,299	23,815	122	258,991

[1/] For the years 1950-54, data for private and State ownerships were not separated.

ACCURACY OF 1959 REINVENTORY DATA

Forest Area and Timber Volume

Estimates of forest area and timber volume were obtained by sampling and they therefore have sampling errors. Sampling errors were calculated for only the major items as shown in table 16.

Table 16 implies that the values which would result from a 100-percent sample lie within the ranges indicated for the specified probabilities.

Table 16.--Sampling error of estimates of forest area and timber volume

Item	Estimated total	Sampling error in percent	
		Odds, 2 out of 3	Odds, 19 out of 20
Commercial forest land	617,000 acres	±2.7	±5.3
Noncommercial forest land	180,000 acres	±1.5	±2.9
Volume (Scribner)	10,173 million board feet	±9.1	±17.9
Volume	2,281 million cubic feet	±7.0	±13.6

Sampling errors for estimates other than total area or total volume were not calculated. However, sampling errors for these can be roughly approximated by using figure 1.

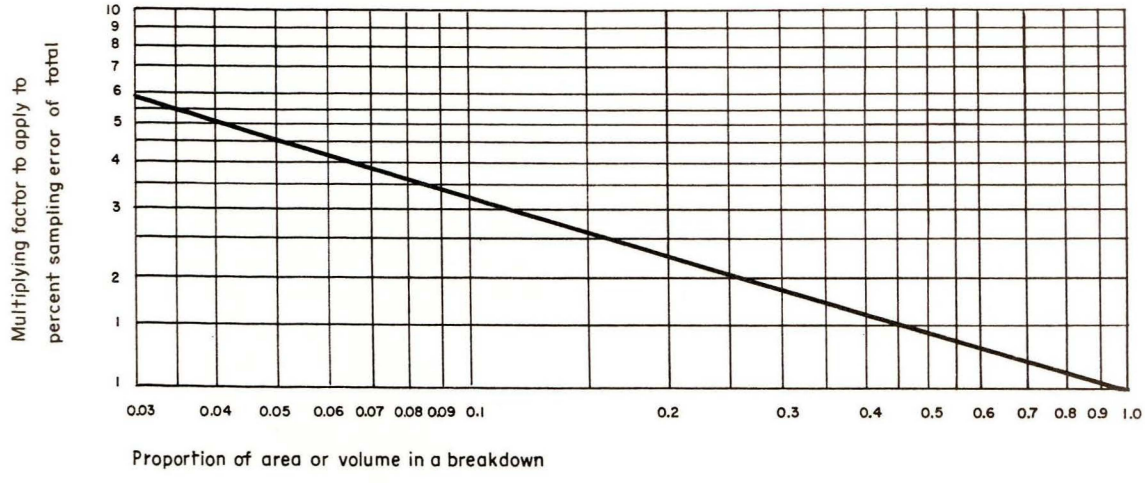

Figure 1.--Ratio of sampling error of an area or volume breakdown to sampling error of total area or volume.

For example, assume that the sampling error reported for a total is ±5 percent, and an estimate of the sampling error for an item which is only 0.25 of this total is desired. Reading from figure 1, the multiplying factor for a proportion of 0.25 is 2. The estimated sampling error for the item is then 2 times ±5 percent, the sampling error of the total, or ±10 percent.

DIFFERENCES IN RESULTS OF INVENTORIES

Some of the difference between the forest-area and timber-volume statistics from the first reinventory and those from the second reinventory are due to physical change, such as cutting of stands, restocking of deforested areas, and growth of stands into the next larger size class. Some are due to variations in the procedures used to interpret and classify forest conditions, to variations in standards of utilization, to changes in Forest Survey standards and definitions, and to areas excluded from the second reinventory because of urban development. These variations make it difficult to draw meaningful conclusions from comparison of statistics of the two inventories; however, certain general facts concerning Pierce County's present forest condition appear evident. For one, recognizing the difference in standards of the two inventories, it appears evident that there has been a real decline in sawtimber volume in the county. This decline has occurred primarily in Douglas-fir and western hemlock.

It also appears evident that there has been a real increase in the volume of hardwoods since the last inventory. Most of the hardwood volume occurs on cutover conifer lands which have restocked with hardwoods, and such areas have increased in the past 20 years.

Also, the area of commercial forest land has decreased by about 70,000 acres, principally because of urban development in the western part of the county.

Table 17.--Comparison of forest area statistics for Pierce County, first and second reinventories

(Acres)

Land-use class	1938	1959
Commercial forest	689,000	617,000
Noncommercial forest:		
Productive-reserved	85,000	101,000
Unproductive	96,000	79,000
Total noncommercial forest	181,000	180,000
Total forest	870,000	797,000
Nonforest	207,000	276,000
All land	* 1,077,000	1,073,000

Table 18.--Comparison of timber volume statistics for Pierce County, first and second reinventories

(Million board feet, Scribner rule)

Species	1938	1959
Softwoods:		
Douglas-fir	6,166	3,892
Western hemlock	4,876	3,759
Pacific silver fir	1,313	1,113
Noble fir	525	282
Western redcedar	775	392
Other	255	301
Total	13,910	9,739
Hardwoods:		
Red alder	17	277
Other	26	157
Total	43	434
All species	13,953	10,173

FOREST SURVEY PROCEDURE

Procedures used in the second reinventory of Pierce County were materially different from those used in the previous inventories.

The second reinventory was a cooperative project involving both national forest and Forest Survey personnel. The White River Working Circle, inventoried by national forest crews, was completed in 1957. Area other than national forest was completed in 1959.

Land classification for the county was based on a systematic grid of field plots. A field plot consisted of a cluster of three 1/5-acre circular subplots spaced at 6-chain intervals. Each subplot was classified as commercial forest, noncommercial forest, or nonforest land. The percentage of subplots in each class was applied to the total land area to determine the acreage in each land-use class. Subplots falling on commercial forest land were further classified by forest type, stand-size class, stocking class, and ownership, as indicated by the plot location and tally. The percentage of subplots falling in each type was applied to the total area of commercial forest land to determine the acreage by forest type, stand-size class, stocking class, and ownership.

Tree measurement data obtained on the field plots expanded by total commercial forest land provided estimates of growing stock and mortality volume by species and size as well as by ownership.

DEFINITION OF TERMS

Land Area

Total Land Area

Includes dry land and unmeandered water surfaces.

Forest Land Area

Land at least 10 percent stocked by trees of any size, or formerly having such tree cover, and not currently developed for nonforest use. Minimum area of forest land recognized in reinventory was 10 acres where type maps were used, and 1 acre where sampling procedures were used.

Nonforest Land Area

Land that does not qualify as forest land. Minimum area recognized in the reinventory of the counties was 10 acres where type maps were used and 1 acre where sampling procedures were used.

Forest Land Classes

Commercial Forest Land Area

Forest land which is producing or capable of producing industrial wood and not withdrawn from timber utilization.

Noncommercial Forest Land Area

Unproductive forest land incapable of yielding crops of industrial wood because of adverse site conditions, and productive public forest land withdrawn from commercial timber use through statute or administrative regulation.

Types

Commercial Forest Land Type

Forest land is typed on the basis of the predominant species, as indicated by cubic volume for sawtimber and poletimber stands and number of trees for seedling and sapling stands, or on the basis of forest condition, such as nonstocked cutover or burned-over land. Where none of the indicated species comprise 50 percent or more of a given stand, the stand is classified on the basis of

plurality of cubic volume or number of trees. In classifying forest land by type, the minimum area recognized is 1 acre.

Noncommercial Forest Land Types

Productive-reserved. Public forest land withdrawn from timber utilization through statute, ordinance, or administrative order but which otherwise qualifies as commercial forest land. Types designated the same as for commercial forest land.

Unproductive. Forest land incapable of yielding crops of industrial wood products (usually sawtimber) because of adverse site conditions.

Subalpine. Forest stands at the upper elevational limits of tree growth.

Noncommercial rocky. Areas within the commercial forest zone but so steep and rocky that they are incapable of producing usable wood products.

Nonforest Land Types

Vegetative. Cultivated land, stump pasture, grass, or brush on nonforest land.

Nonvegetative. Includes barrens and towns.

Unmeandered water. Includes unmeandered streams and lakes, and tideflats.

Tree Classes

Sawtimber Tree

Tree of commercial species, 11.0 inches d.b.h. and larger, that contains at least one 16-foot coniferous saw log or one 8-foot hardwood saw log to a variable top diameter never less than 8 inches inside the bark. Also, 25 percent or more of the gross board-foot volume must be free from rot or defect.

Poletimber Tree

Tree of commercial species, 5.0 to 10.9 inches d.b.h., in which 25 percent or more of the gross cubic-foot volume is free from rot and defect.

Sapling and Seedling Trees

Live trees of commercial species, less than 5.0 inches d.b.h., and of good form and vigor.

Cull Tree

Live tree of sawtimber or poletimber size that is unmerchantable for saw logs, now or prospectively, because of defect, rot, or species.

Sound cull tree. Live tree of sawtimber or poletimber size that contains 25 percent or more of sound volume but will not make at least one merchantable saw log, now or prospectively, because of roughness, poor form, or species.

Rotten cull tree. Live tree of sawtimber or poletimber size in which less than 25 percent of the total volume is sound.

Mortality Tree

Tree which has died from natural causes and which was not a cull tree at the time of death.

Salvable Dead Tree

Standing or down dead tree that contains 25 percent or more of sound volume and at least one merchantable 16-foot coniferous or 8-foot hardwood saw log.

Stand-Size Classes

Sawtimber Stand

Stand of sawtimber trees having a minimum per-acre net volume of 1,500 board feet (International 1/4-inch rule).

Large sawtimber stand. Stand in which the majority of the volume is in trees 21.0 inches d.b.h. and larger.

Small sawtimber stand. Stand in which the majority of the volume is in trees from 11.0 to 20.9 inches d.b.h.

Poletimber Stand

Stand failing to meet sawtimber stand specifications but at least 10 percent stocked with poletimber and larger (5.0 inches d.b.h. and larger) trees and with at least half the minimum stocking in poletimber trees.

Sapling and Seedling Stand

Stand not qualifying as either a sawtimber or poletimber stand but at least 10 percent stocked with trees of commercial species and with at least half the minimum stocking in sapling and seedling trees.

Nonstocked Area

An area less than 10 percent stocked with present or potential growing-stock trees.

Stocking

Stocking is the extent to which growing space is effectively utilized by present or potential growing-stock trees of commercial species. "Degree of stocking" is synonymous with "percentage of growing space occupied" and means the ratio of actual stocking to full stocking for comparable sites and stands. Stocking may be measured in terms of number of trees, volume, basal area, cover canopy, or other criterion or combination of criteria.

Well-Stocked Stand

A stand that is 70 percent or more stocked with present or potential growing-stock trees.

Medium-Stocked Stand

A stand that is 40 to 69 percent stocked with present or potential growing-stock trees.

Poorly Stocked Stand

A stand that is 10 to 39 percent stocked with present or potential growing-stock trees.

Nonstocked Area

An area less than 10 percent stocked with present or potential growing-stock trees.

Timber Volume

Live Sawtimber Volume

Net volume in board feet of live sawtimber trees of commercial species:

Scribner rule. The common board-foot log rule used in determining volume of sawtimber in the Pacific Northwest.

International 1/4-inch rule. The standard board-foot log rule adopted nationally by the Forest Service for the presentation of Forest Survey volume statistics.

Growing Stock

Net volume in cubic feet of live sawtimber trees and live poletimber trees from stump to a minimum 4.0-inch top (of central stem) outside bark.

All-Timber Volume

Net volume in cubic feet of live and salvable dead sawtimber trees and poletimber trees of commercial species, and cull trees of all species from stump to a minimum 4.0-inch top outside bark.

Ownership Classes

National Forest Lands

Federal lands which have been designated by executive order or statute as national forests or purchase units, and other lands under the administration of the Forest Service, including experimental areas and Bankhead-Jones title III lands.

Other Federal Lands

Federal lands other than national forests, including lands administered by the Bureau of Land Management, Bureau of Indian Affairs, and miscellaneous Federal agencies.

State, County, and Municipal Lands

Lands owned by States, counties, and local public agencies, or lands leased by these governmental units for more than 50 years.

Forest Industry Lands

Lands owned by companies or individuals operating wood-using plants.

Farmer-Owned Lands

Lands owned by operators of farms.

Miscellaneous Private Lands

Privately owned lands other than forest industry or farmer-owned lands.

TREE SPECIES

Tree species commonly found in Pierce County include:

Softwoods:

- Alaska-cedar (*Chamaecyparis nootkatensis*)
- Douglas-fir (*Pseudotsuga menziesii*)
- Engelmann spruce (*Picea engelmannii*)
- Grand fir (*Abies grandis*)
- Lodgepole pine (*Pinus contorta*)
- Mountain hemlock (*Tsuga mertensiana*)
- Noble fir (*Abies procera*)
- Pacific silver fir (*Abies amabilis*)
- Ponderosa pine (*Pinus ponderosa*)
- Sitka spruce (*Picea sitchensis*)
- Subalpine fir (*Abies lasiocarpa*)
- Western hemlock (*Tsuga heterophylla*)
- Western redcedar (*Thuja plicata*)
- Western white pine (*Pinus monticola*)

Hardwoods:

- Bigleaf maple (*Acer macrophyllum*)
- Black cottonwood (*Populus trichocarpa*)
- Oregon ash (*Fraxinus latifolia*)
- Oregon white oak (*Quercus garryana*)
- Pacific madrone (*Arbutus menziesii*)
- Red alder (*Alnus rubra*)

RECENT FOREST SURVEY REPORTS

Number	Title	Date
140	1960 Washington Log Production	March 1962
139	Forest Statistics for Okanogan County, Washington	March 1962
138	1960 Oregon Log Production	January 1962
137	Forest Statistics for Grant County, Oregon	November 1960
136	Forest Statistics for Southeast Washington	July 1960
135	Forest Statistics for Umatilla and Union Counties, Oregon	April 1960
134	Forest Statistics for Wallowa County, Oregon	April 1960
133	Forest Statistics for Skagit and Whatcom Counties, Washington	September 1959
132	Forest Statistics for Baker and Malheur Counties, Oregon	October 1958
131	Forest Resources and Forest Industries of Lane County, Oregon	December 1957
130	Forest Statistics for Tillamook County, Oregon	December 1957
129	Forest Statistics for Lincoln County, Oregon	October 1957

Available from:

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